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ABSTRACT

In a speech before the American Educational Research Association, the author asserts that childhood education theory is going through one of its periodic over-reactions to new findings. The result is the present overemphasis on environmentally caused cognitive development. Yet a very basic biological law is the law of human variability. The overemphasis on the intellectual aspect of child development is harmful if other crucial personal development areas involving emotion, motivation, and social competence are ignored. If the general aspects of a child's development are attended to and appropriate conditions established, the child will learn because learning is an inherent feature of being a human being. The child's history of deprivation or failure, his motivation for attention and affection, his feelings towards adults and his self-concept are as important determinants of how he functions as is his formal cognition. (MS)

TRAINING THE INTELLECT

VERSUS

DEVELOPMENT OF THE CHILD

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Given my respect for what the people in this room represent and the work that they are doing, I consider it a great honor to be with you. I am, however, concerned about the pressures that you will be subjected to in the very near future. Unless I am badly mistaken, it is the child educators, the child development specialists, the psychologists, in fact, all individuals concerned with the child's development who are going to be tugged and pulled at ideologically. The entire area of child development is going to become a theoretical battleground, if it is not one already. We are going to have to develop in ourselves the ability to assess ideas, assess theories, to know what is nonsense and what looks promising and to guarantee enough inner strength and knowledgeability in each and every one of us so that we will not succumb to every new idea that comes upon the scene. If one takes an historical overview to the problem of early childhood education or the problems of the developing child, it looks very much as if the ideas represent a swinging pendulum. One of the basic themes of my talk is going to be that this pendulum invariably swings too far in one direction or the other. It will take all the wisdom we can muster to see that this pendulum gets back upon an even keel.

It wasn't too many years ago that education in general was terribly concerned about the personal adjustment of the child. It was the heyday of John Dewey and his adherents; the emphasis was on the child's personal adjustment and his overall contribution to a democratic society. This was a very popular point of view. If you didn't accept this emphasis, you were considered an iconoclast. However, this approach fell into disfavor, due, in part, to the excesses of this particular viewpoint in the hands of people who really didn't comprehend it fully. Part of this fall from favor had nothing to do with children intrinsically, nor with the inherent nature of a good education. It

had more to do with the zeitgeist, the spirit of the time, a zeitgeist which had a tremendous impact upon education, especially early childhood education. An especially important recent factor in our changing views was the Russians shooting a little round ball in the air, a ball which they called "Sputnik". At that point, it appeared that the entire American populace panicked,...."My Lord, the Russians are ahead of us!" It was then that the education system began getting a tremendous number of critics. Invariably, these critics were people who were terribly knowledgeable about child development, such as Admiral Rickover. The cry went up: "The Russians are training children in mathematics, in scientific concepts, in engineering, while we are training our children in finger painting. We must do something about this!" Shortly thereafter, the nation witnessed a super swing of the pendulum toward the 3 R's, "Enough of this adjustment nonsense!", reading, writing, and arithmetic were the in phenomena. Everyone seemed to feel that there was something terribly wrong with our children, something wrong with the way we were educating them. Many of the critics felt that we were pampering the child and what was needed was a good, solid Three R education. There was a turning away from a concern with the adjustment of the child toward a concern with the cognitive development of the child. The always implicit and sometimes explicit question here was: "How do we make our children smarter so that we might build bigger and better Sputniks than the Russians?"

Simultaneously, there developed in this country an emphasis that actually has rather long historical roots. It is a viewpoint that has a great deal of appeal due to our nation's particular philosophy concerning the nature of man. I can't deliver a lecture on the sociology of knowledge, but I would like to point out to you that values which have nothing to do with facts often shape

our attitudes concerning what is and what is not a fact.

What I'm talking about here is a point of view that, in my work, I refer to as the "Environmental Mystique." For those of you that are writing this down, be careful, because when I gave this talk in Washington, it was reported that Professor Zigler was speaking about the "environmental mistake". I'm not sure that this is too far from wrong. Taken in its simplest form, the environmental mystique holds that intelligence is essentially trainable: that the intellect (that collection of cognitive processes -- memory, concept formation, the formal structures of cognition and intelligence) was essentially the result of an environmental input and, in essence, that intelligence was an environmental product. This viewpoint, this environmental mystique, is sweeping the country. You find it everywhere. In Hunt's book, Intelligence and Experience, you have the credo, almost the Bible, of the environmental mystique. It is suggested in the book's very title: Intelligence and Experience. There is a clear suggestion here that if we could just get the right experiences into children, they would all be brilliant.

I find Hunt's book, Intelligence and Experience, a healthy theoretical treatise; however, the manner in which the implications of this book have been spelled out to the layman is not very healthy. For instance, I would refer you to an interview with Joe Hunt published in the "Reader's Digest" a couple of years ago. The "Reader's Digest" doesn't seem to have been satisfied with the article alone, an article which followed a question-and-answer format. They added a flier to the front of their magazine provocatively asserting that the article contained information on "How to Raise Your Child's I.Q. by 20 Points".

We see articles in "Harper's" and the "New York Times" magazine, where we find that eminent child development specialist, Maya Pines, telling us: "What we need for the poor children of this country is a 'pressure-cooker education'." I now encounter people who, following a report in "Time Magazine" concerning a particular remedial program, actually believe that shouting at children very loudly makes them smarter.

Perhaps you saw the efforts with infants of the Harvard-M.I.T. workers reported in a fairly recent issue of "Life Magazine", an issue which had on its cover a striking picture of a tiny infant looking up at something-or-other. This article featured the work of Burton White who found that if you put mobiles and other moving objects over cribs of young infants, they did better on certain developmental tests than infants who weren't exposed to these objects. What was not emphasized was that the correlation between the developmental abilities measured and later intelligence has been found in other studies to be zero. Actually, I think highly of White's research efforts; what I object to are the popularized implications of this work. I have now encountered middle-class mothers loaded with anxiety because they didn't put a mobile over their infant's crib. They ask me what can they do to rectify this tragic error, now that their children are 17 and 18 years of age. I guess that they believe that their children would have been all 'A' students rather than just college graduates had they as mothers only known about mobiles. It is this sort of thing that worries me. I'm sure that you are encountering this same phenomenon in parents who visit you in the classroom. Someone must finally stand up and say: "Look, these are hypotheses, theories and preliminary findings. We actually know little about changing the formal structure of the intellect. There have been some promising experiments, but

it is much too early to speak in terms of those specific events which produce intelligence. It's just not that simple."

Another important individual whose work supports the environmental mystique is Professor Bruner of Harvard. In my opinion Bruner is a very wise man. I have great respect for him, but I would take issue with his views concerning the plasticity of the intellect. The very terminology which he emplcys bolsters the environmental mystique. He is fond of talking of technology. The notion here is that if we can just find the right technology, we can increase both the rate and final level of cognitive achievement. Again, I'm skeptical. This is all reminiscent of reports in the New York papers concerning the work of the Deutsches in New York, reports which are certainly not the fault of the investigators. The Deutsches found an increase of approximately ten I.Q. points in children attending their nursery school. This was reported in the paper as indicating: "A Point a Month I.Q. Increase". Thus, all you have to do is send your child to this particular nursery school, and his I.Q. will be raised a point every month. If true, many of us would like to send our own children there for 40 to 50 months worth.

Do not misunderstand me. I am in favor of the research being done, and we are all indebted to the researchers I have mentioned. The work they are doing needs doing and I am engaged in much the same sort of research myself. What I object to is the naive acceptance of the environmental mystique. Such an acceptance never involves a careful analysis of what the research actually shows, what the limitations of the search are, or the full implications of this work for our understanding of the development of the cognitive processes. Instead, it is simply seized upon to support the view that all differences in cognitive functioning are due solely to differences in environmental input --a point of view which I cannot accept.

Another troublesome aspect of this emphasis on environmental technology is that it lends itself so readily to the credo of American business. If it is simply a matter of technology, that is what the American business does best. In short order, then, we find Xerox in the education business. Again, I am not here to damn Xerox or Creative Playthings, or all of the other companies. The work that some of these companies do, the products they produce, if built upon developmental principles and if utilized by teachers who know how to employ them, can be useful devices in teaching. However, most of the products are not of this carefully thought out variety. What I see is American educators and American business often running helter-skelter, producing gadgets and gimmicks. At the same time, we find school administrators trying to stay up with the Joneses: "My Lord, does that school have a talking typewriter? We must have one, too."

I'm not convinced that the problems of cognitive development have been sufficiently resolved to allow for a comprehensive educational technology. I don't believe that all the panaceas, the gimmicks, the gadgets, that are being used with young children are the optimal means of producing intelligence. Many of these devices have been built upon theoretical efforts which have not themselves been developed to the point which would allow such technological derivations.

There is much more involved here than profits and the quality of a particular set of theoretical papers. I'm not against Xerox making some money; I happen to be a shareholder in the company. Furthermore, I'm not at all concerned about the quality of the theoretical papers of Hunt, White, Bruner, and the Deutsches. These papers are very good providing that their impact is made on people who can understand them and can build upon them. What does

concern me is the rise of a viewpoint concerning children, especially deprived children, which in the long run may be potentially harmful to the very children whom we are trying to help.

Notice how the environmental mystique has permeated our views concerning Head Start programs. In many of these programs, after we've tried this gadget or that gimmick, we discover that the children do not invariably become more intelligent. Once we have accepted the environmental mystique, the only logical conclusion is that there is something very deviant about these particular children or something very inadequate in those individuals attempting to teach them. I have already encountered individuals who feel that the deprived child is beyond help and I have witnessed the hopelessness that such a point of view produces. The point that I am trying to make is that undue optimism about what you can do with the child must invariably breed undue pessimism. I think that it was Santayana who once said that people who do not know history are forced to relive it, and I think that he was very, very right.

If you consult the history of education in this country, you find another era in which the environmental mystique also held sway, albeit with a somewhat different type of child. I'm speaking of that period in the training of retarded children when the notion of mental orthopedics was in ascendancy. The mental orthopedics notion can be traced directly to the French theorists Itard, Sequin and Binet, all exponents of the environmental mystique of that time. The mental orthopedics movement held that if you could just give a child the right kind of experience and training, it would be possible to make intellectually retarded children normal. State schools were originally set up in the country with this idea in mind. In the early days, children did not

live in state schools. They came here to participate in particular kinds of training programs. Many of the practices involved in these programs are being rediscovered today. We now refer to them as "enrichment programs", and interestingly enough, many of these practices were in vogue over 75 years ago. What was the result? Did the retarded become normal? No, they did not. Shortly thereafter, even the professional became very negative about retarded children. They asserted that the best that could be done for them was to stack them up like cordwood in these institutions. It was then that the state schools became custodial institutions and it was at this point in time that our treatment of the mentally retarded entered its very darkest phase. I think it came to this because the mental orthopedics approach was unrealistically optimistic.

We have to be realistic in our expectations for children because, if we are not, if we expect too much, if we demand too much, then the pendulum effect just seems to pull us in the opposite direction. The reaction to over-optimism seems to be an undue pessimism in which we assert that little can be done for children. This, of course, is not true.

Let me speak to you briefly about the nature of cognitive development. The one point that I wish to make is that we are all very far from understanding its exact nature. We can certainly all agree that experience is important in the development of cognition. We certainly do not know exactly how experience interacts with the child's genetic endowment in the production of intelligence. We surely haven't discovered any sure-fire experiences that invariably make the individual wind up at an intellectual level higher than that which he could have attained had he not had those particular experiences. A common view is that whatever it is that modal middle-class parents do is

what produces intelligence. This strikes me as a very questionable assumption. We simply do not know. I, for one, would certainly object to any extreme environmental position. There is such a thing as native endowment and anyone who denies it is ignoring an extremely convincing body of evidence. The answers that have been offered to this question of the role of environment vary tremendously. At one extreme you have the neo-Gesellians whose views represent what is probably the strongest nativistic, anti-environmentalist position existing in the country today. Within such a position cognitive development is seen as being, in many ways, an unfolding process. Thus, if you guarantee the child a normal environment, defined in relatively broad limits, the child's cognitive abilities will naturally develop. This reminds us of the pre-formationistic or the pre-deterministic views of cognitive development.

At the other extreme, you have the naive environmental mystique in which all differences in cognitive development are viewed as the function of differences in experiences. You have other thinkers falling somewhere between these extremes, thinkers who assert that the child isn't influenced by every experience. Such workers have emphasized such phenomena as critical experiences. We have here the view that the impact of an experience is determined by the particular point in cognitive development at which the experience impinges upon the child. It is not the purpose of my talk to review various theories of cognitive development. The only point I'm trying to make is that there are several possibilities, and no theorist has, yet, to my satisfaction, totally illuminated the nature of intellectual development. We can agree that both experiences and endowment are important. However, exactly how experience interacts with the inherent characteristics of the individual remains far from clear.

I do, however, want to venture an opinion. In opposition to Bruner, Hunt and others, I do not believe that the formal intellect of the child is as plastic as the supporters of the environmental mystique would have us believe. We are not going to repeal the law of human variability. The very nature of the gene pool of our population will always guarantee variability in cognitive development. The notion that we will produce a homogeneous race of geniuses through the programming of experiences is a daydream, a daydream which I find to be contrary to a very basic biological law, namely, the law of human variability.

I would like to take exception to another aspect of the environmental mystique and the teaching methods to which it has given rise. I think that this mystique presents a view of the learning process and a view of the child that is essentially erroneous. There is an inherent view of the child's learning process contained in Pines' request for a pressure-cooker approach to children and all those others who speak to us of the mass acceleration of intellectual growth. These individuals basically mistrust and misunderstand the nature of the child and his development. Buried in these hurry-up efforts is the question: "How do we make the child learn?" This is shortly followed by an effort to program the child's surroundings and thus produce, if not actually force, learning in the child. In my opinion, learning is the natural condition of the child and we should never have raised the question: "Why does the child learn?"

The child learns for the same reason birds fly. You do not need to force learning upon the child. Learning is an inherent feature of being a human being. The only meaningful question, therefore, is not why do children learn, but rather why is it that some children do not learn. Approached in

this way, the problem is not one of how do you go about getting intelligence into non-learners but rather determining the conditions that interfere with the natural process of learning. Our approach, then, to the non-learning child would be more of one in which we've removed those events or attitudes that interfered with learning. This is a far cry from approaching the child with a view in which learning is an alien enterprise which must be forced upon an unwilling and recalcitrant organism. I think many of you already have a feel for the sort of thing I am saying. Certainly, we are all aware that children learned before Hunt and Bruner told us how, and before there were any talking typewriters. Indeed, children learned before there were schools of any sort. How could this be possible without the formal programming of experience which we have come to associate with the formal educational process? The answer, I think, is that the child, in his natural state, is a much more autonomous learner than adherents of the pressure-cooker approach would ever believe. I am convinced that the child does most of his learning on his own, and often the way to maximize it is to simply leave the child alone. The child probably accomplishes some of the most significant learning in his every day interaction with his environment. Learning for the child is thus a continuous process and not one limited to the formal instruction and whiz bang remedial efforts which have recently captured our attention.

This point of view is not a particularly unique one and can be found readily in the theoretical statements of workers interested in early childhood. Such workers have always displayed a profound respect for the importance of play, curiosity, the natural give and take between the child and his environment. I believe this view is essentially correct. However, its proponents are currently only voices in the wilderness. I think that if we

were to put these views into practice and diligently structure situations so that the child could have maximal commerce with his environment and could utilize the constructive aspects of play and other natural features of development, we would, in the long run, develop more intelligence than will accrue in Maya Pines' beloved pressure-cookers.

A second major theme of my talk is that whatever the nature of cognitive development might be, such development has been over-emphasized in our current society. The nation's most recent view of the child, be he in a crib or in a Head Start Center, is that the child is a small computer which adults must program. There are many who think that this cognitive program is what the educational process is all about. What must be emphasized is that cognitive development and/or intelligence does not equal social competence. Why are we that concerned about intelligence anyway? Is it that great a predictor of the way someone behaves? There is vast literature on retarded children that speaks to this point. Workers long thought that the institutionalized retarded child's prognosis could be determined by giving him an intelligence test. The view here was a simple and appealing one. If the child had a relatively high I.Q., he would be socially competent if released from the institution; if he had a low I.Q., he would not. After numerous studies, reviewed recently by Windle, we discovered that in children whose IQs ranged from approximately 40 to 80, there was no relationship between IQ and the ability to function in our society. Even in children of normal intellect, the relation between intelligence and a variety of social competence indices is not terribly striking. On school achievement measures which should be very highly related to intelligence, the typical relation between IQ and achievement is about .50 which means that intelligence can account for about

25% of the variation in achievement. The point being made here is that there is a lot more to behavior than the formal computer between the individual's ears. Furthermore, our society must be concerned about more than producing geniuses. Our society is just as much in need of good bricklayers, good mechanics and good athletes as it is of nuclear physicists.

The major crisis confronting our nation is not solely one of intelligence or the lack thereof. We have all recently witnessed our cities being burned and our people being shot. I do not view this as having a great deal to do with the formal characteristics of the intellect. It really makes little difference if the man who burns down a building or the individual who shoots down the burner has an IQ of 55 or 155. Contrary to popular views, most of our citizens who are considered to be socially incompetent have more than enough formal intelligence to function adequately in our society. More important than intellectual level is the fact that many of these individuals have had experiences which have alienated them from our society. The attitudes of these individuals toward themselves and toward others are such that they find it very difficult to achieve happiness in our society. Their attitudes, motives and emotions are such that they find it difficult to contribute to our society and to actualize themselves within its framework.

We must be just as concerned with the development of positive attitudes and motives as we are with the development of the intellect. It is our failure to appreciate how much a child's values, motives and general psychological orientation determine his social competence as an adult, that has led us to a misunderstanding of what optimal child development is all about. This misunderstanding in turn has led to our interacting with the child in an erroneous fashion.

The nature of this misunderstanding was brought home to me one day in no less a place than the White House. With the other members of the National Planning Committee of Head Start, I attended a meeting in which Mrs. Johnson brought 200 women to the White House. The purpose of this meeting was to inform these women about Head Start so that they might work in behalf of this effort in their local communities. We all now know of the magnificent job that these women did. Mrs. Johnson delivered a speech and I found one point which she made in the speech upsetting. It is a point which I've heard others make and it has been re-iterated so often that it now seems to have the status of being a fact. Mrs. Johnson commented on the phenomenon of deprived children entering kindergarten or first grade without knowing their own names. The implication here is in keeping with the environmental mystique concerning intellectual development. That is, that the experiences of our economically disadvantaged children are often such that their cognitive system is inadequate to the task of storing and retrieving their own names upon request. It dawned on me that such a view really makes little sense. One can think of the ability to store and retrieve your own name as a one-item intelligence test. Children learn to master their names between the ages of 2 and 3, and begin school at the ages of 5 and 6. A little rough arithmetic would indicate that deprived children who do not give their names have IQs below 50. Such a very low IQ certainly does not characterize disadvantaged children.

The error being made here, I think, is that instead of approaching the deprived child as a whole child, as a dynamic on-going system, we approach him simply as a system comprised of nothing but intellect, that is as a little computer. We think of him only as a cognitive input-output system. We ask

the child: "What's your name?", and what we sometimes get is: "I don't know". When we get such a response, we invariably think in terms of the poor quality of the child's cognitive system. Such thinking combined with the environmental mystique invariably leads us to the conclusion that the child's dreadful experiences have made him stupid. We have here a prime example of too much emphasis being given to the cognitive aspect of children's behavior. Instead of being cognitive theorists, let us view this matter within the perspective of the child being questioned. When do you ask the child to tell you his name? Typically on the first day of school. Let us appreciate the situation for the child. He often arrives at school, knowing only the slum culture when some lady whom he knows nothing about asks him to tell her his name. I think the problem a child has at this point has little to do with the formal cognitive system and much to do with the attitudes toward strangers which he has developed during a formative period in his life.

When asked his name by the teacher, the first thought that probably comes into the child's mind is: "Why does she want to know? Is she a police lady? Does all of this have something to do with the welfare check? She looks friendly enough--maybe I should tell her....but, no, it might cause trouble. What did I learn in the slums; what's a good, safe gambit when dealing with strangers...'Keep your mouth shut.'" What you then get out of such a child is "I don't know". If your orientation is simply a cognitive one, your conclusion is that this child is so stupid that he doesn't even know his own name. He knows his name probably as well as you know yours. There is something wrong with this child, but it is not a cognitive defect. He is defective in the sense that he is interacting with you in a way that is self-defeating. His psychological stance, his orientation to you is an overly cautious one

that takes him out of the mainstream of an educational system as we typically structure it. If you wish to help this child, the answer is not ABC boards or the careful teaching of his own name. What you must do is give him those experiences which will lead to his interacting with a strange adult in a trusting way. We tested this view of why a child could not report his own name in a small nonrigorous study in the New Haven Head Start program. We did find a small number of children who, upon entering the program, stated that they did not know their own names. I asked the teacher to do a very simple thing. When the child said that he didn't know his name, the teacher was to say to the child: "My name is Mrs. _____, and it must be very scary to have somebody you don't know ask you your name. You're probably wondering why I want to know your name. Well, you see, a little later we're going to have juice and cookies and if I don't know your name, I might not be able to call you and you'll miss out on your juice and cookies." Following this, all but one child immediately told the teacher their names. The remaining child represents an interesting story in itself. This child not only didn't seem to know her own name, but as the year progressed, was found to be very withdrawn and participated minimally in the program. One day, an older child from the neighbourhood came to pick up our little heroine and the teacher said to the older child: "You know, this little girl doesn't know her name. I bet you know her name and you could tell me." The little girl in question immediately grabbed the older child's arm and frantically shouted "Don't you tell her!" What we had here was a child whose motivational structure was too hardened at the age of 5 to be circumvented by the promise of juice and cookies. She was more interested in protecting herself than to receive the good things of the little society in which she found herself.

The failure to appreciate the importance of motivational and emotional factors in the child's performance has led us to over-emphasize, misinterpret and misunderstand the implications of those findings which have reported increased IQs in deprived children following a nursery school experience. Time does not allow any full discussion of the benefits and problems involved in collecting IQs. I do wish to make the following general statement: As is the case for any behavior, performance of the child on an IQ test essentially reflects three factors. The first is formal cognitive ability, a factor studied at great length by such workers as Piaget, Bruner and Hunt. The second factor has to do with the child's achievements which are determined in large part by the idiosyncratic experiences of the child. It is possible to separate formal cognition from the child's achievements. Thus, a child may have a formal cognitive system adequate to the task of storing the information concerning the definition of the word "gown", for instance. However, if he has never heard the word "gown" and you ask him what it is, his answer must be that he doesn't know. What must be noted is that the problem here is not a formal cognitive one but rather the lack of a particular achievement caused by the particular nature of the child's experiences. It would be just as erroneous to call this child stupid as it would be to call a middle-class child stupid who has not experienced that particular set of events which includes the definitions of "chittlings" and "wino". The third factor has to do with the motivational and emotional system. Thus, it is possible to get an "I don't know" response from a child whose formal cognitive system and achievements are both adequate to the task at hand. Competing motivational responses may result in a performance far below that dictated by the cognitive and achievement abilities of the child.

Approached in this way, it should be apparent that a change in a child's IQ performance does not necessarily indicate a change in the child's relative cognitive ability. The change may have been due to changes either in the achievement or motivational systems. At this point, I would refer you to a paper by Earl Butterfield and myself, published in a recent issue of Child Development. In this study, we carefully examined the nature of the changes in deprived children's IQ performance following a nursery school experience. We discovered that the improvement in IQ, averaging about 10 points, was not due to changes in the formal intellectual functioning of the child but rather to changes in the motivational features of the child. It appears that these Head Start children enter the program with 10 more points of intelligence than they are capable of using in the standard test, or, for that matter, standard school situations. The Head Start experience doesn't make these children inherently brighter. The extremely worthwhile thing that it does do is to give these children those experiences which, by the end of the year, allow these children to use all of the intelligence that they have in a testing situation.

It is not my purpose to belittle the role of experience in the development of formal cognition. By all means, let us continue our work on how and when particular experiences influence the development of specific cognitive processes. However, there is one statement that I will take my chances on: There would be a considerably larger pay-off if we spent as much time in our Head Start centers getting children to use the ten points of intelligence that motivational factors cause to lie dormant as we do in trying to add ten more IQ points to the child's potential. The effort that I am suggesting must be made explicitly rather than implicitly. We must work directly on

those motivational and emotional factors which often constitute the roots of a child's ineffectual behavior. When approached in this way, the entire IQ issue falls into what should be its proper perspective. As long as we worship cognition, remedial efforts such as Head Start will be evaluated in terms of IQ changes, changes which will be misinterpreted as the inexorable reflection of changes in the child's formal cognitive system. We can appreciate the importance of cognition, while at the same time attending to the other aspects of the child's development which are clearly important in determining into what type of adult the child will develop. We return again to a central theme of my talk. We must not succumb to a zeitgeist in which cognition has been elevated to an end-all in children's development. As important as formal intelligence is, it is equally important in the education of children to develop human beings who respect themselves and others. These children must have those experiences which lead to positive attitudes about our total social system of which the educational system is but one part. They must have those experiences which lead to their feeling that they can obtain success within this system. Again, I say, that the proper goal of education is not the production of intellectual paragons, but rather, the production of adjusted individuals representing a wide spectrum of intellectual ability, who actualize themselves as human beings given whatever intellectual potential they have.

I'm not, by nature, a social philosopher. The credentials I possess are those of a student of child development. However, I'm very concerned about a dichotomy that I presently find in the child development area. After wandering for a couple of decades in a behavioristic wilderness in which a view of the human being as being a cognitive organism was unacceptable, American psychology was more than ready for a theoretical renaissance in which the

cognitive aspect of human behavior played a central role. But I do believe that the cognitive emphasis has gotten a little out of hand, especially in respect to the development of young children. In America today, cognitive theory is in, and high status is bestowed upon workers interested in the nature of cognition and its development. Although not spelled out in so many words, unlike the tough-minded cognitive theorist, workers interested in the social, emotional and personal development of the child are considered tender-minded PTA-ish types. There are, of course, some exceptions to this picture which I have drawn, but I believe it to be a generally accurate reflection of the current pecking order in the child development area. This emphasis of the cognitive over the social and emotional aspects of development was commented on in a recent editorial by Alberta Siegal, the outgoing editor of Child Development (December, 1967).

Those of us who believe in the importance of emotional and motivational factors in a child's development must do more than engage in the type of polemic which this talk represents. It is imperative that we demonstrate through sound empirical research the important role played by motivational factors. We must isolate experimentally the specific emotional and motivational variables that interfere with the child's competence across a wide variety of tasks. We must discover what particular experiences give rise to self-defeating motives, and, most importantly for educators, we must discover those experiences which ameliorate the effects of such negative factors. My colleagues and I are engaged in just such an effort in our work at Yale. We have already uncovered a number of motivational variables that characterize the non-learning child. Furthermore, we have demonstrated that motivational effects can be manipulated experimentally in just as vigorous a fashion as

the manipulations that have been reported in other types of variables. It is really not a question of being tough-minded or tender-minded. It is a question of being committed to a view that motivational and emotional development is just as important as is intellectual development.

Several of the factors that we have been investigating are important ones for educators and an appreciation of how they operate in children would aid educators in their work with the child. Time certainly does not permit any complete cataloguing of our research efforts. Those of you who would like to get a more complete picture of our work are invited to write to me for reprints of our published research efforts. I would, however, like to mention a few of the phenomena that have captured our interest. First there is a well-documented phenomenon discovered in our work and the work of others, namely that children who do not receive enough affection and attention from the important adults in their life space, suffer in later years from an atypically high need for attention and affection. We find that such children, when faced with cognitive tasks, are not particularly motivated to solve the intellectual problems confronting them. Rather, these children employ their interactions with adults to satisfy their hunger for attention, affection, and yes, as unscientific as it may be, their need for love. We have conducted longitudinal studies of children who were socially deprived in the first few years of life and we still find the effects of these early depriving experiences some ten years after they were initially experienced.

Note the problem that such children present to their teachers. Following the curriculum outline, a teacher presents a task to the child. Instead of attending to the task and solving it, the child may whine and ask the teacher to solve the task for him. If the teacher is tuned in only to the cognitive

aspects of the situation, her only conclusion is that the child is stupid. On the other hand, the teacher who realizes how depriving experiences spell themselves out in the motivational structure of the child may more correctly conclude that what is interfering with the child's performance is his need for a positive interaction with an adult. We will not help the child if we insist on dealing with him as a cognitive system. If, on the other hand, we appreciate the child's emotional needs and attempt to satisfy them, we would not be surprised to see the child then go on to a better school performance.

I'm sure that many of you recognize that what I have been speaking about is relevant to an extremely important developmental dimension, namely the child's normal progression from dependence to independence. It would appear that such movement is impeded in those children who do not receive the normal amount of affection, attention, and concern in their early years. As a result, it is difficult for these children to leave dependency behind and to become more autonomous and independent. Without such feelings of autonomy and independence, the child simply does not become a very good task-oriented problem solver. Given this relationship between feelings of autonomy and problem solving, it is just as important for the educator, and especially the early childhood educator, to help the child develop feelings of autonomy as it is to help him intellectually master some new cognitive input.

Some fine empirical work has been done on this issue by two excellent young researchers, Susan Harter and David Balla. Dr. Harter, in a very controlled situation, found that deprived children had much more difficulty learning a problem when social interaction with an amiable adult was possible than when it was not. It would appear that these children exp nded more effort partaking of the attention and support they found in the situation

than they did in solving the discrimination problem with which they were confronted. Again, I ask you how should educators deal with such children: by training their intellect to deal with discriminating problems, or by doing something directly to alter the child's need for affection and attention, a need which will not only interfere with school activities but with a child's general social competence? Further evidence on this point is contained in a study by Dr. Balla who actually observed deprived children in everyday classroom situations. Consistent with the more experimental findings, Dr. Balla found that deprived children employed the classroom to satisfy their emotional needs for attention more than they did to master the cognitive curriculum.

Of course, children are often more complex than this. It is only through an appreciation of a child's complexity that we can optimally help the child in his development. I am thinking here of another major finding of our research efforts. We have discovered that children who have been emotionally deprived have a high motivation to interact with adults but are, nevertheless, wary of doing so. Stated most simply, these children view adults as being potentially punishing agents and are thus wary or fearful of them, even though longing desperately for the positive social reinforcement that could be forthcoming. We have labeled this phenomenon the child's negative reaction tendency and have measured it in different ways. Without getting involved in the intricacies of our research, let me report to you that deprived children often attempt to avoid the adult whereas non-deprived children, usually of the middle-class variety, tend to be much more ready to approach the adult. The relevance of the negative reaction tendency for our teaching efforts is rather obvious. How successful can an instructor be in teaching a child

whose basic orientation is to avoid the teacher? Psychologically, that child already has one step outside the classroom. The teacher will only be able to maximize her effectiveness at that point where she has overcome the child's negative reaction tendency. Again, the child is simply spending more time protecting the self from potential harm than he is in solving cognitive problems. Given the very nature of this child's personality dynamics, it is not very surprising to learn that, from the child's viewpoint, the classroom's intellectual exercises often appear picayune and of no great importance.

We have also looked closely at another set of debilitating events in the lives of children. What I am referring to here are failure experiences. One of the major problems of the deprived child is that they simply fail too often. Not only do they frequently fail but failure is everywhere around them, anchored in their social milieu. These debilitating effects of failure can also be found in middle-class children, of better than average intellect, whose achievements do not measure up to their parent's expectations. I make this point because I find myself appalled that in certain of the recent efforts, deprived children or retarded children are viewed as being different in kind from our more typical child. This is certainly not the case. It is not the fact that a child is deprived or retarded that invariably makes him act the way he does. Rather, many of his behaviors are an outgrowth of particular experiences and such behavior would often be found in any child who had experienced these events, regardless of the child's IQ or his socio-economic class. We can, of course, expect to find a higher prevalence of reactions to failure in deprived children than in middle-class children, for the simple reason that the deprived child has a greater likelihood of experiencing atypical amounts of failure.

One common reaction to massive amounts of failure that we have investigated is a much lowered expectancy of success with concomitant lowered aspiration level. The child who fails too often sets an aspiration level for himself beneath that which he is capable of accomplishing. The failure to appreciate lowered aspiration levels in children can drive a well-meaning teacher berserk. You give a child a two part task with each part of equal difficulty and he solves the first part but not the second. There is no cognitive reason why the child does not solve both parts. When faced with such a situation, the teacher finally damns her curriculum, her own abilities as a teacher, or perhaps most frequently, the child himself. In these circumstances, the child is often considered unteachable, if not downright perverse. Here again, we see the teacher succumbing to the view that the child is nothing but a cognitive system. A more correct interpretation is that the teacher is dealing with a child who has failed so often that he is satisfied with solving only the first part of the task. The child is quite satisfied with his accomplishment and cannot, for the life of him, understand why the teacher is dissatisfied. This simply adds to the problem since the child thinks he has succeeded while the teacher has indicated that he has failed.

This lowered expectancy of success was demonstrated strikingly in a very neat study conducted by Sonja Osler of Johns Hopkins University. She presented children with a very simple two-choice size discrimination problem. All the child had to learn to do was to pick up the larger of two squares, no matter which of the two positions it was in. If set up for a rat, our little infrahuman friend could learn it in 35 to 40 trials. However, Dr. Osler found that even though a correct response was rewarded with a piece of

candy, many of her children did not learn the solution even after 150-200 trials. When watching a child behave so stupidly, there is a certain appeal in asserting that there is something seriously wrong with the child's cognitive system. Confronted with a child's inadequate performance, we could easily hypothesize some sort of malfunctioning disinhibitory mechanism. That is, we would be asserting that the child's cognitive system is such that he cannot inhibit the selection of the wrong square. Inherent in such hypothesizing we again find the error of equating a child's performance with his cognitive abilities. We must give up this view in favor of viewing this learning situation within the child's framework, a framework which centrally includes the child's aspirations, self-image, and personal view of what is expected of him. Approached in this way, it should be noted that if the child learns absolutely nothing in Osler's problem, he will get a piece of candy on half the trials by chance alone. Thus randomly picking up the blocks guarantees him a piece of candy on the average of one every two trials. If the child is satisfied with fifty percent reinforcement, he could easily conclude that he has solved this particular problem and be very pleased with himself. While the child is thus feeling successful, the experimenter is telling himself that the child cannot learn. The problem here is not in the child's learning ability but rather in his willingness to accept a level of success which denoted failure to the experimenter, who, by the way, tends to have a 100 percent success expectation so characteristic of America's middle-class teachers.

Dr. Osler tested this expectancy of success notion with a simple but rather ingenious manipulation. When the child had not learned the problem after a large number of trials, Dr. Osler said to the child, "Now we are going

to play this game a little bit differently. When you are right, you will still get a piece of candy, but when you are wrong you will have to give me a piece of candy back." Played under these rules, random selection of the blocks would result in no candy being won, since the child would be right half the time and wrong half the time. This zero percent of reinforcemnnt was too low and these non-learning subjects, who were willing to settle for 50 percent, were not willing to settle for nothing. With the change in rules, Dr. Osler found that her subjects learned the problem in 2 or 3 trials. The child's difficulty was clearly a motivational one and not a cognitive one. We have found this same lowered expectancy of success in both deprived and retarded children on tasks other than the one used by Dr. Osler.

We have spent the past decade investigating such factors in the performance of children. Again, it had not been my intention to review all of our research. I do hope that through this selected sampling of research findings, I have indicated why the child's history of deprivation or failure, his motivation for attention and affection, his wariness of adults, his view of himself and his expectancy of success are just as important determinants of how he functions as is his formal cognition. If we are going to fulfill our obligations to the children in our care and to the society in which both they and we are members, then we must be equally concerned with both the cognitive and personal development of the child. There is little chance that our current theorists will allow us to forget the cognitive system. But, regardless of the current theoretical emphasis, it behooves each and every one of us to direct considerable effort to the proper emotional, social and motivational adjustment of a child. We have all heard how important the early

years are for the intellectual development of the child. This is equally true in regard to the child's emotional and social development. It is only by consciously directing our efforts to the development of both of these aspects of human growth that we will be producing the kinds of individuals that our society so badly needs.